

Claims

1. Use of a nucleic acid encoding a (poly)peptide with an intrinsic affinity to plasmodesmata, for the production of plants or parts thereof having an increased tolerance against drought and/or fungal infections and/or increased salt concentration and/or extreme temperature (heat, cold).
2. The use according to claim 1, wherein, further, a plant is regenerated from the transfected plant cell.
3. The use according to claim 2, wherein, following the regeneration, additionally further plants or plant cells are produced from the regenerated plant.
4. The use according to any one of claims 1 to 3, wherein the (poly)peptide is a virus-encoded transport protein.
5. The use according to claim 4, wherein the virus-encoded transport protein is the potato leaf roll virus-(PLRV) transport protein pr17 or a derivative thereof.
6. The use according to claim 5, wherein the derivative is a pr17-protein with a hydrophilic N-terminal extension.
7. The use according to claim 6, wherein the hydrophilic extension is the amino acid MAELSGSGSELHRGGGRSRTS.
8. The use according to any one of claims 1 to 7, wherein the plant, the plant tissue or the plant cell stems from the potato, from tobacco, from cereal or vegetables or are potatoes, tobacco plants, cereal plants or vegetable plants.
9. The use according to any one of claims 1 to 8, wherein the increase in tolerance of plants against fungal infections is an increase in tolerance against infections with Phytophthora.

10. Method for producing plants or parts thereof having an increased tolerance against drought and/or fungal infections and/or increased salt concentrations and/or extreme temperature (heat, cold), wherein
 - (a) a plant, a plant tissue or a plant cell is transfected with a nucleic acid which encodes a (poly)peptide with an intrinsic affinity to plasmodesmata.
11. The method according to claim 10, wherein additionally
 - (b) a plant is regenerated from the transfected plant cell.
12. The method according to claim 11, wherein, additionally, following step
 - (b)
 - (c) further plants or plant cells are produced from the plant gained in (b).
13. The method according to any one of claims 10 to 12, wherein the (poly)peptide is a virus-encoded transport protein.
14. The method according to claim 13, wherein the virus-encoded transport protein is the potato leaf roll virus-(PLRV) transport protein p17 or a derivative thereof.
15. The method according to claim 14, wherein the derivative is a p17-protein with a hydrophilic N-terminal extension.
16. The method according to claim 15, wherein the hydrophilic extension is the amino acid MAELSGSGSELHRGGGRSRTS:
17. The method according to any one of claims 10 to 16, wherein the plant, the plant tissue or the plant cells stem from potato, from tobacco, from cereals or vegetables or are potatoes, tobacco plants, cereal plants or vegetable plants.
18. The method according to any one of claims 10 to 17, wherein the increase in tolerance of plants against fungal infections is an increase in tolerance against infections with *Phytophthora infestans*.